To manage costs, meet KPIs, and maintain safety, many shipping companies rely on weather-optimized routing. However, more benefits are possible — especially in marginal conditions — with the help of expert advice from master mariners.

While safety-focused, severe weather routing decisions tend to be clear-cut, the most effective route in the margins is often less apparent. Typical route optimization doesn’t come down to one specific moment.

Remko Vermeer, a master mariner at DTN, explained, “It’s a continuous process. All the little improvements that we try to make when routing vessels are small optimizations. Together, they add up to large, significant savings that make it worth considering having your vessels routed with the support of master mariners.”
Expert interpretations

The continual monitoring of weather events and the unique understanding of long-term trends is critical to accurate routing advice — especially during changeable seasons, such as winter in the North Atlantic.

Vermeer explained, “Having an accurate long-term perspective helps us communicate the likely impact of changeable conditions, such as those that occur during wintertime in the northern hemisphere.”

Their detailed knowledge then helps the master mariners interpret the data to provide valuable routing advice. “I think our experience in routing contributes,” he said. “We can explain to our clients why they should deviate from the traditional routes, which are usually based on climatic averages.”

The latest weather data

Routing guidance can change during a voyage, as short-term forecasts are more accurate than long-term ones.

Vermeer shared the typical scenario for the nine-day forecast. The master mariners consider the first five days of the data to be reliable. The last four are most likely to be less accurate. As new short-term forecasts are available, they will review the information and adjust their routing guidance as necessary.

To address the more changeable long-term forecasts, Vermeer explained masters make assumptions beyond the nine days. “We know that the optimum route calculation that has come from our software will use average climatic data, which can greatly influence the entire route,” he said. “As short-term forecast data is released, we must review the route, based on our expertise.”

The most appropriate route

In theory, it may seem logical to route vessels for the shortest distance between two points. However, longer routes that avoid adverse conditions can help reduce fuel consumption and costs — in addition to safety risks.

A master mariner will calculate the optimum route for a particular vessel on a specific voyage. That’s where the in-depth knowledge of the seas provides a real advantage. For example, conditions across the Pacific, between the Panama Canal and Asia, mean that the shortest route is not always the way to go. “In fact, going south along a longer route improves the arrival time and the economics of the voyage,” explained Vermeer.

Safety is always priority one

No matter the client or the season, safety is always a top priority. Insights from the master mariners allow ships to take alternative routes before conditions threaten crew safety or vessel performance.

Hurricanes and tropical depressions can significantly impact the safety and efficiency of shipping routes. But vessels can typically route around severe weather. It’s arguably the less dangerous conditions that pose more significant threats.

Vermeer explained, “In the wintertime, we’re not affected by hurricanes in the northern hemisphere. It’s not an issue. But wintertime comes with its unique challenges with a continuous flow of deep depressions and large areas of stormy weather that can affect many vessels.”
A hurricane poses a considerable threat if a vessel ends up in the storm. But as Vermeer stresses, the extreme severity of a hurricane means ships will route around and give the weather front a wide berth. The real challenge comes when balancing safety and efficiency during marginal weather that is not easy to predict or avoid. This is where the advice of experienced master mariners makes the difference.

**Clients have the final decision**

Once the master mariners provide their insights, it’s ultimately up to the client to decide how they want to route their vessel. It’s not unusual for shipping companies to seek the shortest, fastest routes.

Vermeer explains that this is perfectly reasonable. However, the master mariners are committed to ensuring vessels remain within their safety limits.

"On one hand, we represent our clients who want us to deliver efficiency as much as possible," he said. "And on the other hand, we are providing a service to the ship captains who must prioritize keeping their crews, vessel, and cargo out of harm’s way."

Daily updates mean clients always have the latest insights available for their routing decisions. The master mariners’ personalized guidance is designed to help captains and crews better anticipate and respond to the conditions ahead.

Learn more at [www.dtn.com/ship](http://www.dtn.com/ship)